

**IN THE CLAIMS:**

1. (Previously Presented) A metal halide lamp comprising an arc tube that includes:  
a pair of electrode structures, each of which has an electrode at a tip;  
a main tube part made of polycrystalline alumina ceramic having magnesium  
oxide of 200 ppm or below, and containing a discharge space in which the electrodes of the  
5 electrode structures are located to oppose each other; and  
a pair of thin tube parts that connect from the main tube part and are sealed by  
respective sealing members with the electrode structures inserted therein, wherein  
 $20 \leq WL \leq 50$ ,  $EL/Di \geq 2.0$ , and  $0.5 \leq G \leq 1.5$  are satisfied, where tube wall loading of  
the arc tube is  $WL(W/cm^2)$ , a distance between the electrodes is  $EL(mm)$ , an inner diameter of  
10 the main tube part is  $Di(mm)$ , and a crystal grain diameter of the polycrystalline alumina ceramic  
is  $G(\mu m)$ .
2. (Cancelled)
3. (Original) The metal halide lamp of Claim 1, wherein  
the inner diameter  $Di(mm)$  of the main tube part satisfies  $2.0 \leq Di \leq 10.0$ .
4. (Cancelled)
5. (Original) The metal halide lamp of Claim 1, wherein  
the polycrystalline alumina ceramic has transmittance of 94% or more.
6. (Previously Presented) A metal halide lamp comprising an arc tube that includes:  
a pair of electrode structures, each of which has an electrode at a tip;

a main tube part made of polycrystalline alumina ceramic having magnesium oxide in a range of 1 ppm to 200 ppm wherein a uniform grain dimension is provided, and  
5 containing a discharge space in which the electrodes of the electrode structures are located to oppose each other; and

a pair of thin tube parts that connect from the main tube part and are sealed by respective sealing members with the electrode structures inserted therein, wherein

10  $20 \leq WL \leq 50$ ,  $EL/Di \geq 2.0$ , and  $0.5 \leq G \leq 1.5$  are satisfied, where tube wall loading of the arc tube is  $WL(W/cm^2)$ , a distance between the electrodes is  $EL(mm)$ , an inner diameter of the main tube part is  $Di(mm)$ , and a crystal grain diameter of the polycrystalline alumina ceramic is  $G(\mu m)$ .

7. (Cancelled)

8. (Previously Presented) The metal halide lamp of Claim 6, wherein the inner diameter  $Di(mm)$  of the main tube part satisfies  $2.0 \leq Di \leq 10.0$ .

9. (Previously Presented) The metal halide lamp of Claim 1, wherein the polycrystalline alumina ceramic has transmittance of 94% or more.